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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,004	03/11/2002	Thomas Paul Feist	08CN8803-26	4708
23413	7590	03/04/2004	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			BERNATZ, KEVIN M	
			ART UNIT	PAPER NUMBER
			1773	

DATE MAILED: 03/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary	Application No.	Applicant(s)	
	10/063,004	FEIST ET AL.	
	Examiner	Art Unit	
	Kevin M Bernatz	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Amendment

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. The Examiner notes that the text of the following rejections are substantially identical to the previous rejections of record in Paragraphs 4 and 5 of the Office Action mailed November 10, 2003 (Paper No. 10). The only changes have been grammatical to better clarify the rejection of record.

Claim Rejections - 35 USC § 103

3. Claims 1 – 15 and 18 – 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerherd et al. (U.S. Patent No. 5,130,356) in view of Sandstrom (U.S. Patent No. 5,972,461).

Regarding claims 1, 22, 30, 40 and 41, Feuerherd et al. disclose a method for retrieving data from an optical disk, comprising rotating a storage media (*col. 18, line 40 bridging col. 19, line 27*) having a substrate having a thickness of about 0.8 mm to about 2.0 mm (*col. 25, lines 13 – 17*) comprising a single phase plastic resin portion (*col. 3, lines 8 – 26*) and a data layer (*col. 18, lines 40 – 47 and Examples*) disposed on a surface of the substrate, wherein the plastic resin portion comprises poly(arylene ether) and a styrene material selected from the group consisting of polystyrene, styrenic copolymer(s) and reaction products and combinations comprising at least one of the

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foregoing styrene materials (*col. 13, line 67 bridging col. 14, line 7 and col. 14, line 66 bridging col. 15, line 9*); wherein information is retrieved from the data layer via an energy field (*col. 18, line 40 bridging col. 19, line 27*).

Feuerherd et al. fail to disclose wherein the energy field is directed at the storage medium such that the energy field is incident upon the data layer before it can be incident upon the substrate (i.e. a near-field or air-incident recording media).

However, Sandstrom teaches that it is known to form recording disks such that they are either substrate-incident (*col. 1, lines 17 – 23*) or air-incident (*col. 1, lines 24 – 36*), but that air-incident recording is preferred because it “has the potential to produce extremely small spot sizes using evanescent coupling and the resulting high numerical aperture, thereby providing increased spatial density and data storage capacity” (*col. 2, lines 12 – 16*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Feuerherd et al. to utilize air-incident recording meeting applicants' claimed method of use limitations as taught by Sandstrom since air-incident recording is preferred because it “has the potential to produce extremely small spot sizes using evanescent coupling and the resulting high numerical aperture, thereby providing increased spatial density and data storage capacity”.

With regard to the transitional phrase “consisting essentially of” in claim 22, the examiner reminds applicants that “[t]he transitional phrase “consisting essentially of” limits the scope of a claim to the specified materials or steps “and those that do not materially affect the basic and novel characteristic(s)” of the claimed invention. *In re*

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Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976) (emphasis in original)" (MPEP § 2111.03). The MPEP explicitly states "[f]or search and examination purposes, absent a clear indication in the specification of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising."

In the instant case, the Examiner deems that the basic and novel characteristics of the claimed invention are a substrate capable of being used for near-field incident recording at a high recording capacity (*specification, Paragraph 0007*).

The MPEP further states "[w]hen an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention". In the court case cited in the MPEP, it should be noted the court's finding that "the court noted that appellants' specification indicated the claimed composition can contain any well-known additive such as a dispersant, and there was no evidence that the presence of a dispersant would materially affect the basic and novel characteristic of the claimed invention. ***The prior art composition had the same basic and novel characteristic (increased oxidation resistance) as well as additional enhanced detergent and dispersant characteristics***" [emphasis added] MPEP § 2111.03.

In the instant case, the Examiner notes that applicants' disclosed and claimed invention (e.g. claims 10 – 18) provides explicit evidence that additional elements included in the substrate composition do not effect the capability of the substrate for use in near-field air-incident recording at a high recording capacity, i.e. the additional fillers,

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reinforcements, copolymers, etc. are deemed to not effect the basic and novel characteristics of the claimed invention and are therefore not excluded by the transition phase "consisting essentially of".

Regarding claim 2, Feuerherd et al. disclose providing surface features for servo patterning (*col. 17, lines 3 - 35*).

Regarding claim 3, Feuerherd et al. disclose weight average MW's meeting applicants' claimed range limitations (*col. 14, lines 17 - 30 and col. 15, lines 6 - 14*).

Regarding claims 4 - 6, 23 - 25, 33 and 34, Feuerherd et al. disclose that the poly(arylene ether) is preferably formed of a weight average molecular weight of 35,000 to 45,000 which is deemed to implicitly teach that 0% of the poly(arylene ether) should preferably be under 15,000 molecular weight (*col. 14, lines 23 - 27*).

Regarding claims 7 - 9, Feuerherd et al. disclose relative amounts of poly(arylene ether) and styrene material meeting applicants' relative ratio amounts (*col. 14, lines 8 - 16*).

Regarding claims 10 and 11, Feuerherd et al. disclose styrene copolymers meeting applicants' claimed composition limitations (*col. 14, line 66 bridging col. 15, line 5 and col. 16, lines 3 - 12*). The limitation "prepared by bulk, suspension or emulsion polymerization" is a process limitation and is not further limiting in so far as the structure of the product is concerned since the final product will be substantially identical in composition (i.e. still a styrene copolymer composition). In the instant case, Feuerherd et al. explicitly teach that the styrene materials can be prepared by "known free radical polymerization" or "the conventional known anionic polymerization methods" and does

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not indicate that using any of the known methods results in a styrene material which is materially different than a styrene material prepared by any other known method.

Regarding claims 12 – 15, 26 – 28, 35 and 36, Feuerherd et al. disclose adding amount of co-monomer meeting applicants' claimed material and weight percent limitations to styrene copolymers (*col. 15, lines 39 bridging col. 16, line 2 and col. 25, lines 35 - 39*).

Regarding claim 18, Feuerherd et al. disclose additives meeting applicants' claimed material limitations (*col. 16, lines 17 - 24*).

Regarding claims 19 and 20, Feuerherd et al. disclose mixtures of styrene and styrene copolymers meeting applicants' claimed weight percent ranges (*col. 15, lines 6 – 14; col. 16, lines 28 – 45; and col. 25, lines 33 - 39*).

Regarding claims 21, 29 and 37, Feuerherd et al. disclose poly(arylene ether) components meeting applicants' claimed intrinsic viscosity values (*col. 11, lines 16 - 18*).

Regarding claims 31 and 32, Sandstrom teach that for air-incident recording it is known to utilize a reflecting layer between the substrate (*Figure 1, layer 18*) and the data layer, which prevents the energy field from being incident on the data layer (claim 32) and reflects part of the energy field back from the data layer (claim 31). Feuerherd et al. further teaches the use of a reflecting layer improves the reflection of the laser beam in optical and magneto-optical disks (*Feuerherd et al. – col. 18, lines 24 – 28*).

Regarding claims 38 and 39, Sandstrom teaches the importance of producing flat, dimensionally stable substrates with the warp, tilt and axial deflection minimized

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inorder to allow the air gap between the flying head and the disk to remain substantially constant, thereby increase recording density, avoid head crashes and improve the read/write capabilities of the disk (*col. 2, line 13 bridging col. 3, line 18; col. 4, lines 3 – 25; and col. 6, lines 49 – 61*). The Examiner deems that it would have been obvious to one having ordinary skill in the art to have minimized the results effective variable such as the radial tilt through routine experimentation, especially given the teaching in Sandstrom regarding the desire to minimize the tilt and maximize the flatness of the disk to achieve high recording density, reduced head crashes and improved read/write capabilities. *In re Boesch*, 205 USPQ 215 (CCPA 1980); *In re Geisler*, 116 F. 3d 1465, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997); *In re Aller*, 220 F.2d, 454, 456, 105 USPQ 233, 235 (CCPA 1955).

4. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerherd et al. in view of Sandstrom as applied above, and further in view of Landin et al. (U.S. Patent No. 5,538,774).

Feuerherd et al. and Sandstrom are relied upon as described above.

Regarding claims 16 and 17, none of the above disclose adding fillers meeting applicants' material and/or shape limitations.

However, Landin et al. teach that it is known to add fibrous and/or particulate filler meeting applicants' claimed material and shape limitations inorder to control the viscoelastic damping and strain energy ratio of the substrate (*col. 7, line 22 bridging col. 9, line 15*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Feuerherd et al. in view of Sandstrom to use filler meeting applicants' claimed composition and size limitations as taught by Landin et al. in order to control the viscoelastic damping and strain energy ratio of the substrate.

Response to Arguments

5. The rejection of claims 1 - 41 under 35 U.S.C § 103(a) – Feuerherd et al. in view of Sandstrom, with or without Landin et al.

Applicant(s) argue(s) that "CDs do not possess the necessary characteristics to be used for air-incident type applications, for example, an artisan would not have been motivated to use the teachings of Feuerherd et al. *[sic]* in the preparation of a media as is taught and claimed in the present invention" (*page 11 of response*). In addition, applicants argue that Sandstrom teaches "that the substrate-incident media is not interchangeable with the air-incident media". The examiner respectfully disagrees.

The Examiner notes that Sandstrom explicitly mentions that the disclosed disk "preferably is constructed for air-incident recording", but also mentions that the disk "could be adapted for substrate-incident recording, however, by selecting the order in which the various layers are deposited" (*col. 8, lines 59 – 63*), thereby teaching the ease of interchanging from air-incident media to substrate-incident media. The materials used by Sandstrom for a disk capable of both air-incident and substrate-incident are materials "typically used for CD production" (*col. 7, lines 15 – 18*). As such, the

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Examiner deems that there is clear teaching in the relied upon references that substrates used in CD production can be used for both air-incident or substrate-incident recording.

Applicants further argue that with respect to consisting essentially of, that it is not relevant what elements from claims dependent on claim 1 effect the basic and novel characteristics and only whether the elements would affect the plastic resin portions ability to be a single phase. The Examiner respectfully disagrees.

The Examiner notes the MPEP is clear that consisting essentially of only excludes those components which effect the basic and novel characteristics of the claimed invention and that "[f]or search and examination purposes, absent a clear indication in the specification of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising." (MPEP § 2111.03). The MPEP further states "[w]hen an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention".

As stated in rejection of record, the Examiner contends that the basic and novel characteristics of applicants' invention is "a substrate capable of being used for near-field incident recording at a high recording density". While applicants' arguments have been considered, the Examiner notes that applicants own claims and specification provides conflicting evidence that the addition of other elements included in the

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substrate *do not preclude* the invention from meeting the basic and novel characteristic recited above.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (571) 272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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February 26, 2004



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